

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method comprising:

defining a user interface having a plurality of input elements arranged in a matrix configuration;

defining a first cell, the first cell comprising a first parameter representing a first haptic effect;

mapping assigning the first cell to a first input element location in of a the matrix configuration with the defined first cell; and

mapping assigning the first cell to a second input element location in of the matrix configuration with the defined first cell;

receiving a sensor signal from a sensor indicating a manipulation of at least one of the first or second input elements; and

outputting the first haptic effect based at least in part on the first parameter and the sensor signal.

2. (Currently Amended) The method of claim 1, further comprising communicating the defined first cell from a first processor to a second processor.

3. (Currently Amended) The method of claim 2, further comprising:

defining a second cell, the second cell comprising a second parameter representing a second haptic effect;

communicating the defined second cell from the first processor to the second processor; and

~~mapping-assigning the second cell to a third input element location in of the~~
~~matrix configuration—with the defined second cell.~~

4. (Currently Amended) The method of claim 3, wherein the first and second cells are defined by the first processor and the first, second, and third input elements locations are ~~assigned mapped~~ by the second processor.

5. (Currently Amended) The method of claim 3, wherein the third input element location is disposed between the first and second input elements locations.

6. (Currently Amended) The method of claim 1, wherein the matrix configuration comprises a square shape.

7. (Currently Amended) The method of claim 1, wherein the matrix configuration comprises a circular shape.

8. (Original) The method of claim 1, wherein the first cell comprises a first detent and the second cell comprises a second detent.

9. (Currently Amended) The method of claim 3, further comprising providing an actuator in communication with the first, second, and third input elements locations, the actuator operable to provide a computer-modulated force to the first, second, and third input elements locations.

10. (Original) The method of claim 2, wherein the second processor is disposed remotely from the first processor.

11. (Currently Amended) ~~A The method of claim 1, wherein comprising: providing a the first cell comprises ing an arc and first and second edges; and wherein the haptic effect comprises providing a plurality of force vectors within the first cell, the force vectors directed outward from a centerline of the first cell radially toward the first and second edges; and~~
~~delimiting a corner of the cell, the corner formed by an arc joining the first and second edges.~~

12. (Currently Amended) The method of claim 16 ~~[[11]]~~, wherein the switch comprises a circular shape.

13. (Currently Amended) The method of claim 16 ~~[[11]]~~, wherein the switch comprises an eight-way switch, the eight-way switch operable to select a channel about a first axis.

14. (Currently Amended) The method of claim 16 ~~[[11]]~~, further comprising providing a biasing element proximate to a center of the switch.

15. (Currently Amended) The method of claim 16 ~~[[11]]~~, further comprising providing a detent proximate to a radius of the switch.

16. (Currently Amended) A switch comprising:

a sensor;

an actuator configured to output a haptic effect; and

a processor in communication with the sensor and the actuator, the processor configured to receive a sensor signal from the sensor, and to cause the actuator to generate a haptic effect based at least in part on the sensor signal, wherein the haptic effect comprises a plurality of detents defining a first primary channel defined along disposed-about a first axis; a second primary channel defined along disposed-about a second axis; a first secondary channel disposed-proximate to the first primary channel; and a second secondary channel disposed-proximate to the second primary channel, the detents configured to substantially constrain movement to one of the first primary channel, the second primary channel, the first secondary channel, or the second secondary channel.

17. (Currently Amended) The switch of claim 16, further comprising:

a third primary channel ~~defined disposed~~-substantially co-axial with the first primary channel;

a fourth primary channel ~~defined disposed~~-substantially co-axial with the second primary channel;

a third secondary channel ~~defined disposed~~-proximate to the third primary channel; and

a fourth secondary channel ~~defined disposed~~ proximate to the fourth primary channel.

18. (Currently Amended) The switch of claim 17, wherein the first axis is ~~disposed~~ substantially orthogonal to the second axis.
19. (Currently Amended) The switch of claim 16, wherein the first secondary channel is ~~disposed~~-obliquely to the first primary channel; and the second secondary channel is ~~disposed~~-obliquely to the second primary channel.
20. (Currently Amended) The switch of claim 16, wherein the first secondary channel is ~~disposed~~-substantially orthogonal to the first primary channel; and the second secondary channel is ~~disposed~~-substantially orthogonal to the second primary channel.
21. (Currently Amended) The switch of claim 17, wherein the third secondary channel is ~~disposed~~-obliquely to the third primary channel; and the fourth secondary channel is ~~disposed~~-obliquely to the fourth primary channel.
22. (Currently Amended) The switch of claim 17, wherein the third secondary channel is ~~disposed~~-substantially orthogonal to the third primary channel; and the fourth secondary channel is ~~disposed~~-substantially orthogonal to the fourth primary channel.
23. (New) A computer-readable medium comprising program code, the program code comprising:
- program code for defining a user interface having a plurality of input elements arranged in a matrix configuration

program code for defining a first cell, the first cell comprising a first parameter representing a first haptic effect;

program code for assigning the first cell to a first input element in the matrix configuration;

program code for assigning the first cell to a second input element in the matrix configuration;

program code for receiving a sensor signal from a sensor indicating a manipulation of at least one of the first or second input elements; and

program code for outputting the first haptic effect based at least in part on the first parameter and the sensor signal.

24. (New) The computer-readable medium of claim 23, further comprising program code for communicating the first cell from a first processor to a second processor.

25. (New) The computer-readable medium of claim 24, further comprising:

program code for defining a second cell, the second cell comprising a second parameter representing a second haptic effect;

program code for communicating the second cell from the first processor to the second processor; and

program code for assigning the second cell to a third input element in the matrix configuration.